UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/933,685 | 08/20/2001 | Jason F. Hunzinger | 09752-113001 | 2063 |

27572 7590 06/29/2005

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

| EXAMINER | |
|---|---|
| HASHEM, LISA | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2645 | |

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/933,685 | HUNZINGER, JASON F. | |
| | Examiner | Art Unit | |
| | Lisa Hashem | 2645 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *23 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *8-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## FINAL DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 8-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,275,186 by Kong in view of U.S. Patent No. 6,496,7016 by Chen et al, hereinafter Chen.

Regarding claim 8, Kong discloses a method of determining position information for a mobile station in a wireless information system (see Figure 1; column 1, lines 16-19; column 3, lines 8-10) comprising: collecting a plurality of pilot pseudo noise offsets; and identifying a base station for each of the plurality of pilot pseudo noise offsets by evaluating that said identification is consistent relative to the other pilot pseudo noise offsets (column 3, lines 11-38; column 4, lines 15-34 and lines 49-53).

Kong does not disclose evaluating the probability that two or more base stations identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations.

Chen discloses a method of determining position information for a mobile station (Fig. 3, 30) in a wireless information system (Fig. 3) (see Abstract) comprising: collecting a plurality of pilot pseudo noise offsets; and identifying a base station for each of the plurality of pilot pseudo noise offsets (col. 1, line 59 – col. 2, line 67); and evaluating the probability that two or more

base stations ($BS_1 \ldots BS_n$) identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations (col. 3, line 32 – col. 4, line 10).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the method of Kong to include evaluating the probability that two or more base stations identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations as taught by Chen. One of ordinary skill in the art would have been lead to make such a modification to resolve which base station transmitted a received pilot signal and how the base station is obtained.

Regarding claim 9, the method of Claim 8, wherein Kong further discloses inherently ranking each pilot pseudo noise offset (column 6, line 55 – column 7, line 15; column 8, lines 1-32; column 9, lines 12-28).

Regarding claim 10, the method of Claim 9, wherein Kong further discloses said ranking of each pilot pseudo noise offset uses a parameter selected from a group consisting of pilot pseudo noise phase, pilot energy, and ratio pilot chip energy to interference (column 6, line 55 – column 7, line 15; column 8, lines 1-32).

Regarding claim 11, the method of Claim 8, wherein Chen further discloses solving for the position information using the base station identities (col. 3, line 32 – col. 4, line 5; Fig. 4).

Regarding claim 12, the method of Claim 8, wherein Chen further discloses evaluating the probability that two or more base stations ($BS_1 \ldots BS_n$) identified using respective pilot

pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations (col. 3, line 32 – col. 4, line 10) further comprises searching a database for all base stations having a pilot pseudo noise offset equal to first pilot pseudo noise offset in said plurality of pilot pseudo noise offsets to form a first list (col. 3, line 49 – col. 4, line 5; Fig. 4).

Regarding claim 13, the method of Claim 12, wherein Chen further discloses searching the database for all base stations with a pilot pseudo noise offset equal to a second pilot pseudo noise offset in said plurality of pilot pseudo noise offsets to form a second list (col. 3, line 49 – col. 4, line 5; Fig. 4).

Regarding claim 14, the method of Claim 13, wherein Kong further discloses inherently calculating a distance from each base station in said first list to each base station in said second list (column 11, lines 42-65; see Figure 8).

Regarding claim 15, the method of Claim 14, wherein Kong further discloses modifying the distances by a weighting factor (column 5, lines 1-20).

Regarding claim 16, the method of claim 15, wherein Kong further discloses said weighting factor is selected from the group consisting of said distance, pilot pseudo noise offset weighting factor, a phase offset, and a sector antenna angle (column 3, lines 31-38; column 4, line 53 - column 5, line 20).

Regarding claim 17, the method of Claim 13, wherein Kong further discloses comparing distances between base stations in said base station lists (column 11, lines 42-65).

Regarding claim 18, the method of Claim 13, wherein Kong further discloses weighting

the entries in the base station lists (column 3, lines 31-38; column 4, line 53 - column 5, line 20; column 11, lines 42-65).

Regarding claim 19, the method of Claim 13, wherein Chen further discloses wherein said database (Fig. 3, 34) is located in the memory of a network entity selected from a group consisting of said mobile station, a base station, a server (Fig. 3, 32), and a position determination entity (col. 3, lines 1-9).

Regarding claim 20, the method of Claim 8, wherein Chen further discloses solving for the position of the mobile station (col. 1, lines 28-45; col. 3, line 49 – col. 4, line 5).

Regarding claim 21, the method of Claim 8, wherein Kong further discloses averaging the base station locations (column 4, lines 35-46; column 5, lines 1-5).

Regarding claim 22, Kong discloses a method of determining position information for a mobile station in a wireless information system (see Figure 1; column 1, lines 16-19; column 3, lines 8-10) comprising: collecting a plurality of parameters related to identification of network entities or base stations; and identifying a network entity for each of the plurality of parameters (column 3, lines 11-38; column 4, lines 15-34 and lines 49-53).

Kong does not disclose evaluating the probability that two or more base stations identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations.

Chen discloses a method of determining position information for a mobile station (Fig. 3, 30) in a wireless information system (Fig. 3) (see Abstract) comprising: collecting a plurality of pilot pseudo noise offsets; and identifying a base station for each of the plurality of pilot pseudo

noise offsets (col. 1, line 59 – col. 2, line 67); and evaluating the probability that two or more base stations ($BS_1 \ldots BS_n$) identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations (col. 3, line 32 – col. 4, line 10).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the method of Kong to include evaluating the probability that two or more base stations identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations as taught by Chen. One of ordinary skill in the art would have been lead to make such a modification to resolve which base station transmitted a received pilot signal and how the base station is obtained.

Regarding claims 23-35, please see the rejections of the method in claims 9-21 mentioned above, to reject the method in claims 23-35.

Regarding claim 36, Kong discloses a mobile station position locator in a wireless information system (see Figure 1; column 1, lines 16-19; column 3, lines 8-10) comprising: memory which collects a plurality of pilot pseudo noise offsets (column 3, line 60 – column 4, line 14); and a processor which inherently identifies a base station for each of the plurality of pilot pseudo noise offsets by evaluating that said identification is consistent relative to the other pilot pseudo noise offsets (column 3, lines 11-38; column 4, lines 15-34 and lines 49-53; column 11, lines 42-65).

Kong does not disclose a processor evaluating the probability that two or more base stations identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations.

Chen discloses a method of determining position information for a mobile station (Fig. 3, 30) in a wireless information system (Fig. 3) (see Abstract) comprising: collecting a plurality of pilot pseudo noise offsets; and identifying a base station for each of the plurality of pilot pseudo noise offsets (col. 1, line 59 – col. 2, line 67); and a processor or geolocation server (Fig. 3, 32) comprising a database (Fig. 3, 34) evaluating the probability that two or more base stations ($BS_1 \ldots BS_n$) identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations (col. 3, line 32 – col. 4, line 10).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the method of Kong to include a processor evaluating the probability that two or more base stations identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations as taught by Chen. One of ordinary skill in the art would have been lead to make such a modification to resolve which base station transmitted a received pilot signal and how the base station is obtained.

Regarding claims 37-49, please see the rejections of the method in claims 9-21 mentioned above, to reject the method in claims 37-49.

Regarding claim 50, Kong discloses a mobile station which determines position information in a wireless information system comprising: storage elements which collect a plurality of parameters related to identification of network entities or base stations (column 3, line 60 – column 4, line 14); and a processor which identifies a network entity for each of the plurality of parameters (column 3, lines 11-38; column 4, lines 15-34 and lines 49-53; column 11, lines 42-65).

Kong does not disclose a processor evaluating the probability that two or more base stations identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations.

Chen discloses a method of determining position information for a mobile station (Fig. 3, 30) in a wireless information system (Fig. 3) (see Abstract) comprising: collecting a plurality of pilot pseudo noise offsets; and identifying a base station for each of the plurality of pilot pseudo noise offsets (col. 1, line 59 – col. 2, line 67); and a processor or geolocation server (Fig. 3, 32) comprising a database (Fig. 3, 34) evaluating the probability that two or more base stations ($BS_1 \ldots BS_n$) identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby confirming a valid identification of the two or more base stations (col. 3, line 32 – col. 4, line 10).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the method of Kong to include a processor evaluating the probability that two or more base stations identified using respective pilot pseudo noise offset measurements are within range and have a pilot signal receivable by a mobile station concurrently, thereby

confirming a valid identification of the two or more base stations as taught by Chen. One of ordinary skill in the art would have been lead to make such a modification to resolve which base station transmitted a received pilot signal and how the base station is obtained.

Regarding claims 51-63, please see the rejections of the method in claims 9-21 mentioned above, to reject the method in claims 51-63.

***Response to Amendment***

3. All claim objections and 35 U.S.C. 112 rejections noted in the Non-Final Office Action filed on 12-02-2004 are withdrawn.

4. Applicant's arguments, see Amendment, filed 3-23-2005, with respect to the rejection(s)of claim(s) 8-63 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made. Please see all rejections above.

5. Applicant's arguments with respect to claims 8-63, have been considered but are moot in view of the new ground(s) of rejection.

6. Accordingly, this action is **FINAL**.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- U.S. Patent No. 6,889,053 by Chang et al disclose determining the position of a mobile station comprising: evaluating the probability a mobile unit is able to detect one or more attributes associated with an arbitrary base station, give it is located at an arbitrary location within a service area

8. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any response to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**Or faxed to:**

(703) 872-9306 (for formal communications intended for entry)

**Or call:**

(571) 272-2600 (for customer service assistance)

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Hashem whose telephone number is (571) 272-7542. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LH
lh
June 27, 2005

FAN TSANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600